

CONTROL LOGIC FOR FUEL CONTROLS ON APUs

ABSTRACT OF THE DISCLOSURE

5 Conventional auxiliary power units (APUs) may experience over-
temperature shutdowns when attempting to start them at high altitudes.
Further, such conventional APUs may also experience overspeed conditions
when a generator load is removed during on-speed operations. A fuel control
logic that controls the fuel flow cutback below the minimum blowout fuel
10 schedule is provided. A temperature trim loop measures engine temperature to
determine the onset of a possible over-temperature condition. The fuel flow
may then be trimmed accordingly to correct this over-temperature onset.
Further, when the onset of an overspeed condition is detected, such as when a
generator load is removed, the fuel flow may be trimmed accordingly to correct
15 this overspeed onset. The fuel control logic allows the control to find the
individual minimum fuel flow for each fuel control without risking blowout of the
APU itself.